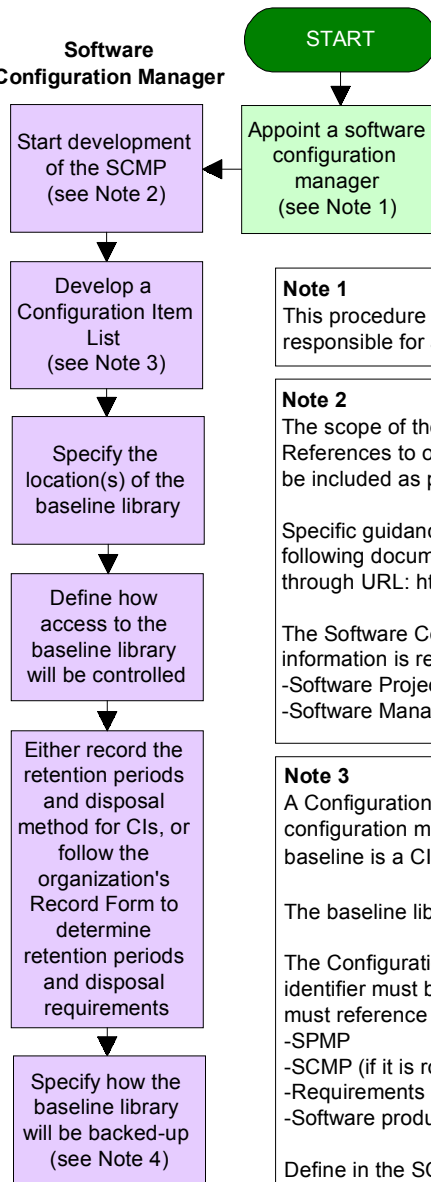# SOFTWARE CONFIGURATION MANAGEMENT PLANNING FOR LOW-, HIGH-, AND CRITICAL-CONTROL SOFTWARE

LMS-CP-5529
Revision: B

Software Manager

START

Software Configuration Manager

Appoint a software configuration manager
(see Note 1)

Start development of the SCMP
(see Note 2)

Develop a Configuration Item List
(see Note 3)

Specify the location(s) of the baseline library

Define how access to the baseline library will be controlled

Either record the retention periods and disposal method for CIs, or follow the organization's Record Form to determine retention periods and disposal requirements

Specify how the baseline library will be backed-up
(see Note 4)

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Objectives:
-to plan and implement Software Configuration Management (SCM) at Langley

Approval _____ Original signed on file _____
Associate Director for Research and Technology Competencies

Note 1
This procedure is invoked by following LMS-CP-5528. The Software Configuration Manager is responsible for applying this procedure to the software project.

Note 2
The scope of the Software Configuration Management Plan (SCMP) may be for one or more projects. References to other documents may be used to provide required information. Likewise, the SCMP can be included as part of the project's Software Project Management Plan (SPMP).

Specific guidance on configuration management processes and plan contents can be found in the following documents: IEEE Standard 828, and ANSI/IEEE Std 1042. IEEE documents can be obtained through URL: http://sw-eng.larc.nasa.gov/larconly/ieee.html

The Software Configuration Manager must be identified in the SCMP. The following additional information is required only if the SCMP is rolled out of the SPMP as a separate plan:
-Software Project Title
-Software Manager

Note 3
A Configuration Item (CI) is an aggregation of hardware, software, or both that is designated for configuration management and treated as a single entity in the configuration management process. A baseline is a CI that has been reviewed and approved.

The baseline library is the location where approved CIs are stored.

The Configuration Item List must contain all CIs to be placed under configuration control. A unique identifier must be applied to each CI and each baselined version of a CI. The Configuration Item List must reference as a minimum:
-SPMP
-SCMP (if it is rolled out of the SPMP as a separate document)
-Requirements
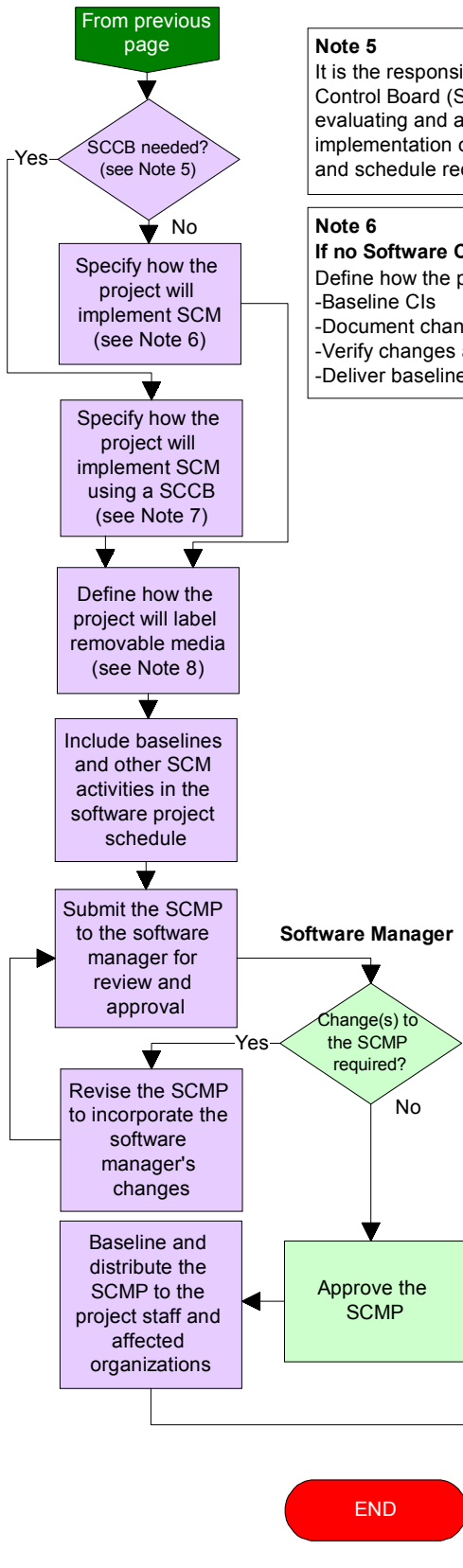-Software products and results, and the corresponding test inputs and outputs

Define in the SCMP how the CI List will be kept current.

Note 4
Backup files must be stored on physically different media. The following information must be specified in the SCMP:
-Restoration contact
-Frequency of backups
-Retention periods

Software Configuration Manager

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SCCB needed? (see Note 5) — Yes

No

Specify how the project will implement SCM (see Note 6)

Specify how the project will implement SCM using a SCCB (see Note 7)

Define how the project will label removable media (see Note 8)

Include baselines and other SCM activities in the software project schedule

Submit the SCMP to the software manager for review and approval

Software Manager

Change(s) to the SCMP required? — Yes / No

Revise the SCMP to incorporate the software manager's changes

Approve the SCMP

Baseline and distribute the SCMP to the project staff and affected organizations

Software Project Team

Follow the SCMP

END

Note 5

It is the responsibility of Software Configuration Manager to determine if a Software Configuration Control Board (SCCB) is needed. A Software Configuration Control Board is the group responsible for evaluating and approving or disapproving proposed changes to configuration items and for ensuring implementation of approved changes. An SCCB is needed when the impact of changes to CIs on cost and schedule requires joint decision making due to complexity, risk, or organizational interfaces.

Note 6
If no Software Configuration Control Board is needed
Define how the project will:
-Baseline CIs
-Document changes to baselined CIs
-Verify changes and create new baselines
-Deliver baseline CIs

Note 7
If a Software Configuration Control Board is needed
The following must be defined for the Software Configuration Control Board in the SCMP:
-Period of effectiveness
-Board membership
-Scope of authority
-Operational procedures to include approval authorities for baselines,
 changes to baselines and releases, and monitoring status of CIs

Define how the project will:
-Approve CIs for baselining
-Make requests for changes to baselined CIs
-Specify the location where Software Change Requests will be stored
-Disposition Software Change Requests (i.e. approve, disapprove or defer)
-Implement and verify changes
-Deliver CIs from the baseline library
-Identify, notify and seek approval from organizations affected by changes
-Ensure the accuracy of the baselined library

Software Change Requests must include the following information:
-Software Change Request identification number
-Software project name
-Initiator's name
-Date submitted
-Baseline CI that the Software Change Request refers to
-Description of change, reason for the change, or description of the problem
 encountered
-Disposition of Software Change Request
-Date authorized
-Software Change Request status, such as "undergoing implementation,"
 "undergoing verification," "baselined"
-Date completed

The following are available for use in the freely distributed Software Metrics Database (which provides automated tracking and status reports) at URL: http://sw-eng.larc.nasa.gov/metrics/public/index.htm: Software Trouble Report, Software Change Request, and the Software Promotion Notification.

Note 8
Media labels must contain the following:
-Project title
-Content description
-Date electronic files were transferred to the media
-Disk or tape sequence number (e.g. Disk 7 of 9)
-Disposal date